DOCUMENT RESUME

ED 112 210 95 CE 005 232

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TITLE Evaluation of Selected Instructional Methods for Academically Disadvantaged Students. Final Report.
INSTITUTION North Central Technical Inst., Wausau, Wis.
SPONS AGENCY Office of Education (DHEW), Washington, D.C.; Wisconsin State Board of Vocational, Technical, and Adult Education, Madison.
REPORT NO VT-102-151
PUB DATE Jun 74
NOTE 50p.; Appendix G may reproduce poorly

EDRS PRICE MF-$0.76 HC-$1.95 Plus Postage
DESCRIPTORS *Academically Handicapped; Educationally Disadvantaged; Educational Needs; Individualized Instruction; Program Descriptions; *Program Development; *Program Evaluation; Remedial Instruction; Remedial Mathematics; *Remedial Programs; Remedial Reading Programs; Secondary Education
IDENTIFIERS NCTI; North Central Technical Institute; Wisconsin (Wausau)

ABSTRACT

The principal purposes of the preparation program at North Central Technical Institute (NCTI), Wausau, Wisconsin, were to provide opportunities for certain students to further their general academic development and to explore various vocational fields. Students intended for the preparatory program were those identified by their high school records and by entrance examinations as needing further development before admission to a postsecondary vocational program. The program objectives were accomplished by: (1) assessing the remedial education needs of students through diagnostic testing in reading, English, math, natural science, and study skills; (2) interviewing instructors for their reactions to the program; (3) visiting other schools to examine methods and curriculum materials used in their remedial education programs; and (4) developing programs to meet the specific remedial education needs of individual students. As a result of these efforts it was recommended that a learning resource center be developed to provide an opportunity for individualized instruction. Three-fourths of the document consists of appended materials: a periodicals bibliography, program objectives, school visitation and seminar report. NCTI structure and functions, forms, and a followup study of students in the developmental program (1970-73). (VA)

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Final Report

Project No. 15.055.151.223 (b)

EVALUATION OF SELECTED INSTRUCTIONAL METHODS FOR ACADEMICALLY DISADVANTAGED STUDENTS

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
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June, 1974

The research reported herein was performed pursuant to a grant or contract with the Wisconsin Board of Vocational, Technical and Adult Education, partially reimbursed from an allocation of Federal funds from the U. S. Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official North Central VTAE District, State Board, or U. S. Office of Education position or policy.

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PREFACE

If we are indeed committed to providing vocational education opportunities for all people, then the Developmental Program must become a viable part of our curriculum. It is clearly evident that the lower 25% of most high school graduating classes would experience great difficulty in many or all of our existing programs. This writer will be the first to recognize the fact that we cannot provide for the special needs of everyone but past experience with the Preparatory Program proves beyond a doubt that we can help many who might otherwise end up as dropout statistics.

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INTRODUCTION

The North Central Technical Institute has since 1959 operated a program for several years entitled "Prep" or under the official state designation of Vocational-Technical Developmental

This program has operated under the traditional concept of assigning students to specific classes, meeting at set hours with a specified instructor. Recent results with this traditional approach for this developmental program have been less than satisfactory.

The purpose of this study was to take a critical look at the present methods and procedures utilized in "Prep" with the hope that an alternative approach for the remedial education program at NCTI's Wausau Campus could be recommended.

Objectives of the study, procedures used, activities conducted, and conclusions and recommendations are included in the body of this report.

North Central Technical Institute
Preparatory (Prep) Program

Statements of Philosophy

1. Students enrolled in the Prep program are those who have indicated by high school achievement, entrance examinations, and interviews that their over-all scholastic achievement and/or maturity indicates a need for further training and development prior to entrance into a desired vocationally-oriented program.

2. The primary purpose of the program is to provide an opportunity to the individual enrolled to further his general academic development. It must be noted that the Prep program is not intended to serve as a make-up program for deficiencies in pre-requisite high school classes.

3. A second purpose of the program is to give the student an opportunity to explore various vocational fields, so as to clarify his thinking in relation to his vocational choice.

Curriculum

1. The curriculum should include an opportunity for the student to further his academic understanding in the fundamental studies of mathematics, science and English. Realizing that one of the most common factors contributing to low academic achievement is poor reading ability (both speed and comprehension) emphasis on reading improvement must be included in the cirriculum.

2. Another contributing factor to low academic acheivement which has been identified is poor study habits. It is therefore essential that the development of good study habits and procedures be a major objective of all classes in the Prep program and that a specific cirruculum for the teaching of good study procedures be included as an integral part of the Prep Forum.

3. Realizing that such a curriculum involves only familiar academic classes it is advisable that some other class be included which introduces almost all new concepts and information in order to create a feeling of expanding development. Also such a class would give the students an opportunity to indicate their ability to learn and comprehend new material. The emphasis in this Prep Forum class shall be to develop a growing awareness of the world and its people about us as well as to understand themselves as a growing maturing young adult. In short it becomes a group counseling atmosphere.

Student Evaluation by Instructor

Since the prime intent of the Prep program is academic achievement and maturing the evaluation of the student's progress in the Prep program classes shall be as follows:

1. A pre-test and post-test shall be administered in each of the basic classes: science, mathematics English and reading.

2. Since the primary purpose of this program is self-improvement and not directed at the development of a specific vocational or technical

skill, and since the classes are non-credit, letter grades will not be used but rather an indication of progress or achievement in terms of the individual's level of attainment. This is to be expressed in terms of the grade level of achievement or in percentile scores based upon these specific standardized tests.

3. Mid-term evaluation is to be a written evaluation to the student in terms of his rate and extent of achievement.

   A. A copy of this evaluation is to be submitted to the Prep Advisor (Mr. Bursik) by Friday of the ninth week.

   B. The instructor shall take time to discuss this evaluation with the student, <u>in private</u>, so that the student fully understands his progress and potential.

4. A. The CQT test is to be re-administered to the prep student two weeks prior to the completion of the semester by the Prep Forum instructor.

   B. The results of the CQT, along with the instructor's final written evaluation shall be utilized in counseling with the student to determine the disposition of the Prep student.

5. Any standardized achievement tests to be used in the Prep program (as the pre-test and post-test) must be approved for use by both the Student Personnel Services Director and the Prep Advisor.

6. As a result of the evaluation and interpretation of the test scores, and the instructor's observation during the semester, the instructor shall prepare a written final evaluation indicating the student's over-all progress and achievement in the particular class.

   A. This statement is to be in the Prep advisor's possession no late than the end of the 16th week of the semester.

   B. In order that this statement can be prepared accurately, it is recommended that the instructor keep an accurate record of the student's class behavior; such as absence, tardiness, promptness of assignments, other study habits, etc.

   C. An <u>anecdotal record</u> shall be maintained for each student.

   D. The instructor will also indicate, in his written evaluation, whether or not he feels the student is prepared to enter into a specific major course of study.

METHODOLOGY

Objectives of the Study

1. To identify the remedial educational needs of the students through appropriate evaluation testing techniques.
2. To obtain NCTI instructor reactions to present Prep program.
3. To see what others are doing in remedial education in terms of programs and curriculum materials.
4. To develop a program to meet the specific needs of individual students for remedial education.

Activities and Procedures

Objective #1:

1. Review present testing evaluation practices for entering students.
2. Identify other possible tests.
   a. Review literature
   b. Talk to others (visit other programs)
   c. Correspond with ACT, etc.
3. Suggest alternative methods of evaluation, if feasible, based on results in 1 and 2 above.

Objective #2:

1. Interview present instructors teaching Prep classes.
2. Interview selected instructors in majors (one each area).
3. Interview Department Chairman.
4. Interview student services.

Objective #3:

1. Identify successful prep programs, VTAE schools and others.
   a. Select and visit - program design, curriculum materials
2. Secure materials from other schools.

3. Contact publishing companies

4. Review literature

Objective #4:

1. Submit program recommendations with alternatives.

2. Report should show staffing needs, schedules, cost estimates, equipment and supply costs. Implementation might be in phases.

A PERT Chart outlining the overall plan of this report is contained in Appendix B

Specific objectives which were to be accomplished during the summer of 1973 are stated in Appendix C

FINDINGS AND ANALYSIS

Student Remedial Education Needs

Remedial education needs of students entering the developmental program were identified through a series of diagnostic tests given at the time of enrollment at NCTI. All students were pre-tested in the following areas: reading, English (grammar and spelling), math, nautral science and study skills. Other tests given were the Kuder Interest Inventory, Otis-Lennon Test of Mental Ability and the Minnesota Personal Problem Test. In addition, a math placement test was given to students who planned to enter programs requiring a background in algebra.

The bibliography (appendix A) provides a list of materials read revealing what others were doing in developmental programs. Reports of visits to other schools and participation in a learning resource center workshop are included in appendix D.

Reactions from faculty members and counselors related to the concept of doing more diagnostic testing so that instructors would have more information about students individual problems, both educationally, and medically follow.

Instructor reactions

Interviews with instructors and department chairmen provided the following comments:

"We need more information about our students before or as soon as they enter our classes. If we were more knowledgeable of their strengths and weaknesses, we might be better able to help them."

"Fewer students per class. There is no way that an instructor can adequately handle the same number of students in a remedial class as compared to a 'regular' class."

"Instructor specialization. Allow a few instructors to specialize in remedial programs. Working with developmental students, one hour, associate degree majors the next, diploma program majors the next, etc. is difficult."

"Strive for a better working relationship with student services."

"Program assists in 'beefing up' program entrants for second semester."

"Essential if we are to serve lower quartile of our high school graduates."

Other Schools

Visits to several schools were made to study the approach and techniques utilized in their learning resource centers and other individualized instructional programs. Several sample packages were obtained from both Fox Valley and Waukesha Technical Institutes.

These materials were very helpful in that they were utilized to design the basic format for the NCTI instructional packages which were later used in NCTI's Learning Skills Center. Various students were interviewed at Fox Valley and their reactions to the individualized mode of instruction appeared to be very positive.

Two NCTI faculty members participated in the Learning Resources Seminar at Western Wisconsin Technical Institute on June 10-13, 1973. This seminar was very beneficial in that it was conducted by several key educators who had several years of experience establishing and evaluating learning resource centers. Many pitfalls were avoided as the result of attending this conference. See appendix D for a more detailed elaboration on these visits.

CONCLUSIONS AND RECOMMENDATIONS

A learning resource center (LRC) should be developed. It becomes increasingly evident that the many varied individual needs of students enrolled in the Developmental Program cannot be met through the traditional classroom approach. There exists a strong need for opportunities to individualize instruction.

It is a recognized fact that the extreme change to a "work at your own pace," or "come in to the LRC whenever you want" concept will not work with the particular segment of the student population we are serving in the Developmental Program. With this in mind, it is recommended that individualized instruction be incorporated within a highly structured setting.

Students should be assigned to work in the LRC in blocks of time, probably 3 or 4 hours. Within that block of time, the instructor involved will have the flexibility to work with the student in various areas for varying periods of time. For example, a student (in a 3 hour block of time) may spend 20 minutes working on Reading Improvement, 40 minutes on English Review, and 120 minutes on Arithmetic Review. This sort of flexibility provides for better meeting individual needs as opposed to the present structure which would provide for 1 hour in each of these areas.

The content of the following courses should be offered through the LRC:

1. Arithmetic Review
2. English Review
3. General Physical Science (except lab)
4. Prep Forum
5. Reading Improvement

The course presently known as Prep Forum should be dropped from the curriculum. The title is confusing and its content should be included in the Reading Improvement and English Review courses.

Instructors working in this area should be totally committed to working with this segment of the student population. Their work load should be entirely within the developmental or remedial area. The "shifting of gears" necessitated by having Associate Degree students, Diploma Program students and Developmental students is highly undesirable.

It is recommended that one person have 25% of his work load in the area of advising and counseling students in this program. Preferably this should be someone who has experience in working with this type of

student. An appropriate educational background should also be required. The 25% of one person's work load should be sufficient for 40-50 students.

An alternative to this proposal might be to reduce the load of all instructors in the program to a lesser degree. This would enable all to share in the guidance/counseling responsibility. It may also be the case whereby smaller numbers of students enable the instructional staff to accomplish this task in the normal work schedule.

The student/teacher ratio should be 15:1 or less. It must be recognized that more individual help must be provided for students in remedial courses. This cannot be compared to the Secretarial Science ATL where students are highly motivated and in most cases not from the lower quartile of their high school class.

It is recommended that para-professional staff not be employed in this program at the present time. Instructional staff working in this area should make recommendations in the future as to whether or not to employ para-professionals.

The primary responsibility of Student Services should be to identify potential students and counsel them into the program. Identification should be based on the success-failure probability of the student in his specific choice of major. The decision to counsel a student into the Developmental Program or permit immediate entry into his choice of major should be based on an evaluation of test results, high school record, and personal interview when necessary.

Success experiences are essential to these students. With this in mind, it is recommended that accurate records be maintained in the form of progress charts, performance records, or task completions. In this manner, the student will be able to quickly assess his achievement in a given area. This will require the development of a systematic, consistent evaluation procedure for each of the courses offered. A developmental record form (see appendix F) was developed to accomplish this objective. This form should help to facilitate information retrievable for future research. The follow-up study, for example, which was completed in August of 1973 (appendix G) involved many hours of researching microfilm in the Student Services office. Questionnaires also had to be mailed to 89 dropout students to gather pertinent data. It appears significant to note that 148 out of the original 169 students who entered the developmental program from 1970-1973 completed it. Follow-up studies such as this need to be expanded so that NCTI can keep an on-going tabulation on how many students enter the developmental program, how many complete the developmental program how many enter a major, change majors and graduate.

In addition to regular courses in the Developmental Program, the student should be permitted to take at least one course in his choice of major. Major instructors should be contacted to determine which courses may be appropriate.

With the implementation of the T and I Occupational Survey course, students would be able to explore a number of program offerings. These programs would include: electronics, electronic servicing, mechanical design, mechanical drafting, residential design, graphic arts, machine tool operation, agricultural mechanics, automotive technology and welding.

NCTI should also consider the development of a similar exploratory course in the area of business administration. This course would include exploration in the programs of: marketing, merchandising, data processing, accounting, secretarial science, clerk typist and insurance.

It is hoped that eventually the programs at the Antigo campus can also be included in this list.

An alternative plan, discussed with Mr. Battist, would be to provide observation and limited participation within the various major areas. A teacher-coordinator would work closely with major instructors in setting up these sessions concurrent with regular classes. This course might be titled "Occupational Exploration". Also included might be library assignments, field trips, and other planned learning activities.

It is recommended that all courses be offered as credit courses. With the implementation of the new grading system, the student would have the choice of taking these courses for credit or non-credit. Although the credits earned for Developmental Program courses would not count toward graduation in a major, it would aid in removal of the stigma of having to take non-credit courses of a remedial nature.

Provide for special summer employment of instructional staff each year for the purpose of evaluation of the program and further development of curriculum materials. A period of time where concentrated effort may be expended in this area will prove more effective than scattered hours throughout the year.

It would also be desirable to have the instructional staff meet with staff members of other schools with similar program, review their curricular materials, and view their facilities.

It is recommended that this be an open entry, open exit program to the fullest extent possible. The program should be designed to meet the immediate needs of entering students. It should also take into account the varied learning abilities and learning rates of the student population.

It is apparent that enrollments will fluctuate from time to time but this in no way should affect the continuity of the program.

APPENDIX

APPENDIX A

Library Magazine Bibliography

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for Prep Program

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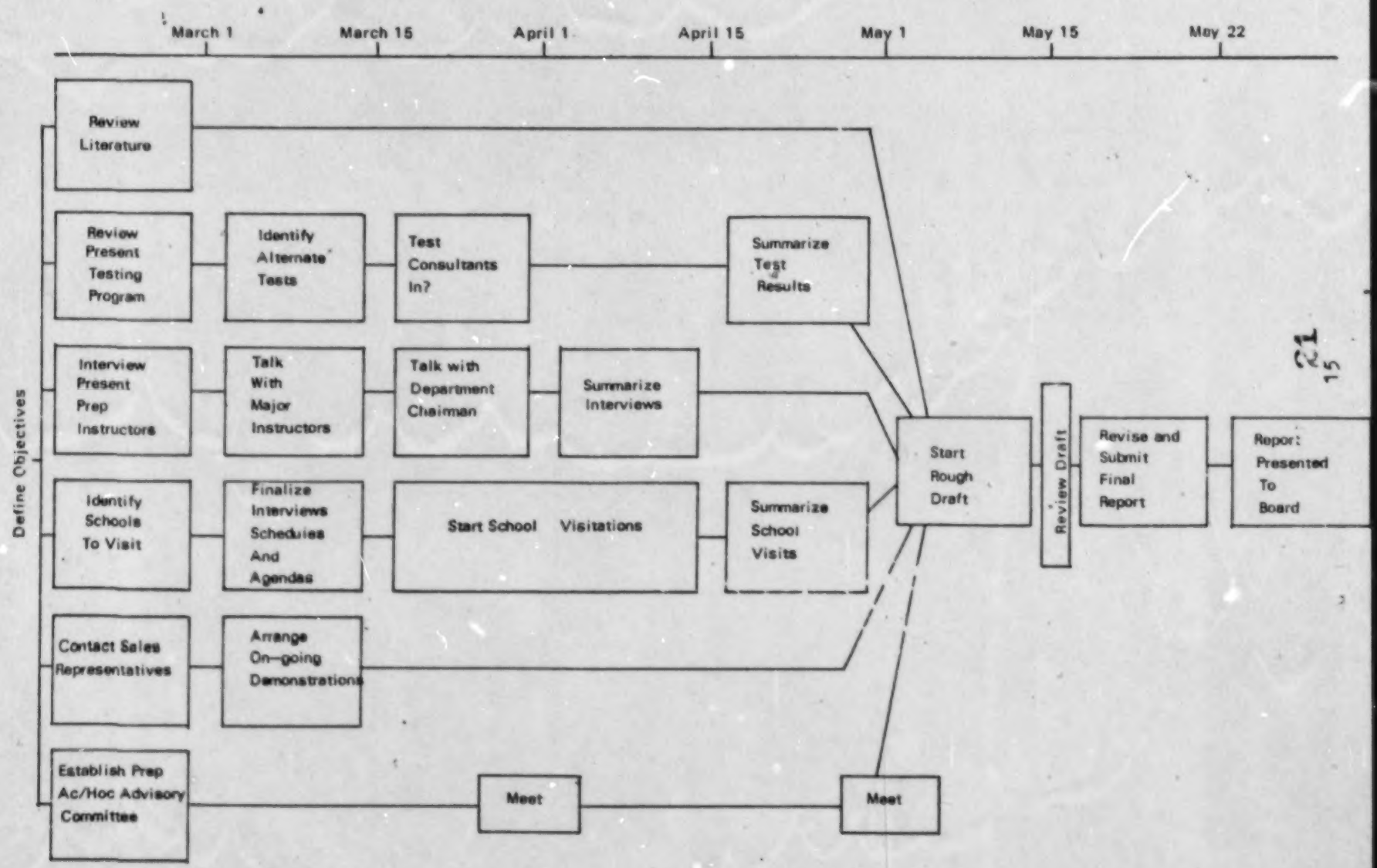
APPENDIX B

Prep Program Study
Jan – May 25, 1973



APPENDIX C

North Central Technical Institute
May 18, 1973

Objectives for Developmental Program
to be Accomplished During the Summer of 1973

Thomas Kurkes

1. Supervise and coordinate all of the activities of the program.

2. Establish a new pert chart for all summer work.

3. Interview Dr. Bens at Stevens Point.

4. Obtain additional information on the DACUM concept and help determine how this will apply to all areas of instruction in the learning resource center. DACUM will not work in a traditional environment of tests, authoritarian instruction, and rigidly structured activities. I will work with the instructors to:

   A. Establish general areas of competence.
   B. Identify skills required in each area of competence.
   C. Sequencing skills.
   D. Structuring skills into a finished profile.
   E. Establishing rating scales for measuring skills.
   F. Selecting and developing printed materials.
   G. Help develop alternatives in media and modes of instruction.

5. Coordinate the development of the basic format to be used in developing individualized learning packages.

6. Check to see if tests (pre and post) are consistent with the behavioral objectives established for the various courses.

7. Help to assemble resources, providing situations through which the student can practice the behavior specified.

8. Coordinate the development of self-tests and performance tests.

9. Get a commitment on the part of every instructor to the learning philosophy used in the developmental program.

10. Develop an inventory sheet to be posted in the center.

11. Identify staff and their qualifications.

12. Develop an in-service training program to prepare new staff for the center.

13. Prepare the ground work for a public relations program.

14. Start work on a meaningful budget.

15. Help to determine how career education fits into this program.

16. Work with student services to determine how our students will be identified and filtered into the program.

Larry Kaffine

1. Develop alternate tests for arithmetic review. Students have differing completion times so Larry wants to develop a series of "A," "B," "C," tests to use as alternates.

2. Individualize the Algebra course. He will break this traditional course into packages and tapes.

3. Work with student services on developing some interview and counseling techniques appropriate for an approach to the DACUM concept. (All learning resource personnel will interview and establish a working relationship with each student on a one-to-one basis.)

4. Prep Arithmetic Curriculum Development.

   Materials to be developed will consist of:

   A. Tests for individualized instruction.
   B. Packaged materials for individualized instruction.
   C. Present programmed text has 38 units of work. He will be writing tests to correspond with these units. Each unit, or group of units, will require several tests. This will be necessary because on an individualized basis, any student who fails a test must review the materials and continue testing until an acceptable level of proficiency is obtained.
   D. Packaged materials should be developed in the following areas: Ratio and proportion, formula manipulation, metric system by ratios, powers of ten. He cannot possibly develop all the above packages in the allotted time of two weeks. He will concentrate his efforts on ratio and proportion for there is great need in this area.

John Bauman

1. Redevelop sections of the old prep forum. John will integrate the use of Time or Newsweek along with the Milwaukee Sentinel into his reading program. John will also find some more appropriate short stories for his students to read. (Find relevant material.)

2. Develop packages from some of the adult basic education materials we have on hand. He will first identify the basic units and objectives as related to DACUM.

3. Work on developing a suitable student progress report sheet.

4. Obtain copies and reading levels of all textbooks used at NCTI, and determine how these texts can be used in the Learning Res. Center.

   A. Inventory, catalog, and evaluate materials presently in possession of NCTI which are relevant to our program.
   B. Study and evaluate the ever increasing wealth of new materials and methods now in use or recommended for use by authorities in the field.
   C. Evaluate two aduio-visual package programs (Learn, Inc., and _____.) Purporting to have achieved measurable success in attaining education objectives through individualization of the learning process in reading and English; formulate and evaluate a battery of diagnostic instruments which will indicate a student's level of proficiency on any given point in time.
   D. Formulate and evaluate pre- and post-tests which will yield a substantive measure of a student's progress.
   E. To discourse and exchange ideas by visiting Marathon Center Campus and other local agencies dealing with developmental deficiencies in students.
   F. Design a flow-chart of furnishings, materials and activity centers to ensure an orderly interplay of students and resources.
   G. Devise and write a tentative curriculum which may be implemented in the fall quarter of 1973.
   H. Devise or recommend the acceptance of commercial programmed English Skills Packages which will be utilized by an experimental group as its sole instructional experience. It is hoped that post-testing the experimental and control groups may provide meaningful data upon which a reliable generalization as to relative effectiveness of innovative and traditional classroom methodology.

Jake Bursik

1. He is assigned the responsibility of teaching the basic science course in the Dev. Pr. curriculum; primary emphasis would be placed in developing materials for this course.

   A. Existing materials would need to be collected and reviewed.

   B. Some materials should be developed for independent study.

   C. Pre- and post-tests should be found or developed.

   D. Lab experiments should be set up along with a schedule for conducting them.

2. Some time should be spent with John Bauman in incorporating portions of the old Prep Forum Course into the course content of English Review or Reading Improvement.

3. Time permitting, he would like to work on the development of a diagnostic testing program to be used with all students entering the Dev. Pr.

4. The DACUM concept should be given consideration and some aspects may be incorporated into our program.

School Visitation

and

Seminar Conference Report

Submitted by: Thomas Kerkes
John Bauman

Learning Resources Seminar

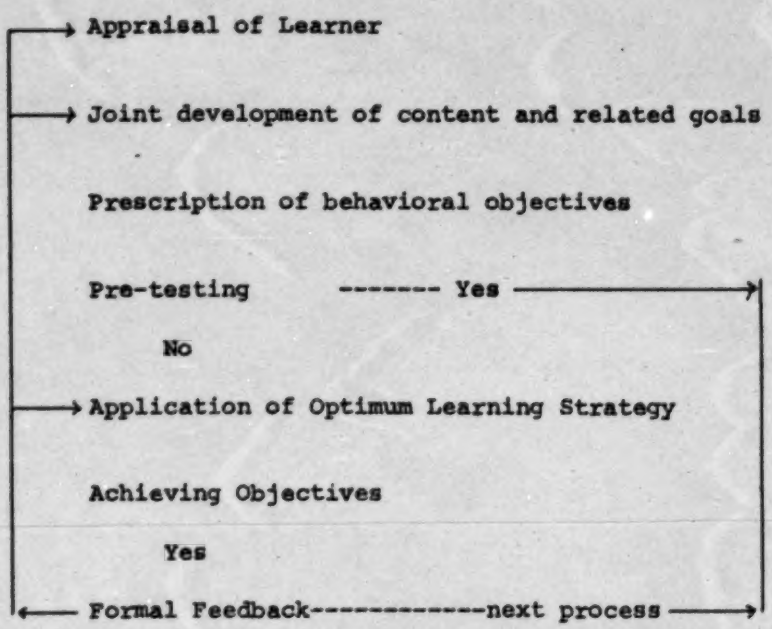
June 10-13, 1973

Western Wisconsin Technical Institute

This Seminar was conducted by several key people who have had several years of experience in the field of learning resource centers. All of the people however were either from Junior Colleges or four year Universities.

Individualized instruction was defined as self pacing instruction using different modes to accomplish individual objectives. The traditional system presupposes failure and normal probability in a lock-step approach. Under this system time and instruction remain constant whereas in individualized instruction time, instruction, and assignments vary. Theoretically under this system, each student can learn by modes best for him. The following basic model was offered as an example:

Instructional System



The first step in individualizing instruction might be to break the present courses down into mini courses. The first data to be packaged should be lecture material covering terms and definitions. The student can easily learn these things on his own. He can later demonstrate his understandings at seminar sessions. This is where the teacher plays his most important role. Students can be graded on their seminars and recycled if they fail.

LEARNING RESOURCES SEMINAR

Under individualized instruction the student is allowed to stretch knowledge out. There is a danger in this in that if you stretch it out too far the student cannot keep current in applying his knowledge. Deadlines must be set. When Waukesha first tried individual instruction, hardly anyone completed the courses.

Dialogue is important in setting up the program. Committees should be established to get some cross-sectional input.

One session was devoted to computerized data in a developmental program. This would be relevant if we ever established a testing center.

Some new functions which a developmental center could serve were mentioned. Small groups could use it to "brush-up" on some skill they need to get a job or a promotion. A meal ticket approach might be used where a student buys a ticket for $12 and is allowed to choose any twenty lessons.

Programs should be set up so that they can be easily updated. This means that all hardware should be closely examined. The following hardware was recommended:

1. COXCO (slide, sound)
2. Telex tape recorders for good audio reproduction
3. Ducayne filmstrip projectors
4. Video tape cassettes

The following recommendations were given on the lab operation.

1. Allow the student about 40 minutes to master a 20 minute tape.
2. Allow plenty of time for orientation.
3. Teach the student how to properly operate the equipment (no more than two pieces at a time).
4. Use student aids (work study) especially the first week of operation.
5. Give complete directions on everything or they will ask a million questions.
6. Make the first packages simple so the student can experience success.
7. Pass out evaluation sheets every week. Students can leave them in a box.
8. Don't get bogged down with make-up work.
9. Make the lessons self sufficient (lower learning levels).
10. Correlate tapes with equipment (Sony with Sony).
11. Avoid the vending machine idea.

12. Buy ready made packages if you can find them suitable to your needs.

13. Show the student the relationship between the packages.

14. Avoid having the students wait for equipment.

15. Break large segments into smaller segments.

16. Use a lot of humor and vaudeville tactics, especially in the early packages.

17. Keep the "meat" in the package. Don't have the student running around the school.

We were able to bring back several samples of learning kits and packages and established some good contacts. This was a very worthwhile seminar.

SCHOOL VISITATION REPORT - FOX VALLEY

John Bauman and I visited Fox Valley Technical Institute on June 18. The physical plant which was designed for individualized instruction is divided into several subject matter areas. This arrangement appeared to work well with a limited number of students. I was told that there is a noise factor during the regular school year. They plan to add a few movable partitions soon to separate some of the areas. Each subject area has its own check-out area which utilizes a mass retrieval system. Fox Valley uses the concept approach rather than a sequenced approach to instruction. This means that the various subject areas can draw freely upon each other for concepts. A student who is having trouble understanding the occurance of blond hair and blue eyes in Psyc unit for example can pull a package in math on probability.

Fox Valley has an impressive array of hardware and software. I checked out some learning packets and found the quality of cassette tapes to vary from poor to excellent (according to audio production standards). The tapes appeared to have both written and oral identifications to facilitate student use. The tapes are played on AVIDI players equipped with headsets.

Fred Timm was very generous in supplying us with master lists of all of their materials. We can secure cassette tapes by sending them some 60 minute blank cassettes. They will record the material and send it back to us. We could then sort the material out on separate cassettes (10-30 minute sections).

Timm contends that they have encountered some success with visualizing their listening tapes. This is an example of the type of innovation which must accompany individualized instruction. Individualized instruction is not just "packaged learning." The instructor should not be a vending machine who says: "here kid, take this package and get lost," or "are you back again!" I would not recommend individualized instruction until the following conditions were met:

1. Objectives are properly written.
2. Traditional courses are validated so comparisons can be made with individualized instruction later.
3. A delivery system is developed.
4. Agreement on course content among all the instructors teaching the course. Allow the major instructors to have some input of ideas. Allow advisory committees to have some input of ideas.
5. Have enough packages so that students will not run out of material.
6. Have at least three forms of every test.
7. Allow for different modes of instruction. Avoid too much print oriented material. Different modes will be needed to recycle students who might fail the first time.

Fox Valley is using colored video tapes which have made quite an impression upon the students. (something new). Some of their most heavily used tapes in the social studies areas are the propaganda tapes. Their Collier Macmillan program has been successful in communications.

I interviewed several students to get their reaction to individualized instruction. One said that: "I have been away from school for fifteen years, I feel confident that I can get started without competing with recent high school grads." Another said: "I feel like an adult and yet I can get all of the personal help I need." One student however said: "I think that sometimes we get too many packages."

Most testing and record keeping functions will eventually be handled through a 370 computor. Test items can then be randomized. All tests are presently locked up at the subject area counters. One of our long range goals might be the development of a testing and mass retrieval center.

I had an opportunity to talk to a Psycology instructor who supplied me with several units (individualized in psyc. and soc\). These units appeared to be in a workbook type format and offered little variety to the student.

Fox Valley has worked on this system (with the aid of Federal money) for four years and have committed over 4000 man hours to the development of their general education programs. One section of shelves alone contained over $11,000 worth of tapes.

I feel that we should attempt to write some Federal projects (something with a new emphasis) which would utilize individualized instruction to help get us moving in general education toward individualized instruction.

School Visitation - Waukesha

We visited Waukesha Tech. on June 19. Mr. Catania talked to us about the pros and cons of individualized instruction at Waukesha. They originally had a "come when you feel like it" policy which was disasterous, attendance dropped off eighty per cent. They now have mandatory attendance for a minimum number of sessions.

Waukesha too has found that they have too many open areas, they also have a noise problem which they have attempted to remedy by extending their partitions and covering them with carpeting. The cost factor in individualized instruction for them is astronomical. They went to individualized instruction with a traditional load formula and have ended up paying virtually all of their instructors for overloads.

Waukesha does not like to give out their materials. (They have found that most people take and do not reciprocate.) We did manage to obtain a few sample packets with the understanding that we would send them something. We talked to instructors in all areas of general education. Several were working on Summer projects to individualize various courses. We could consult with the following people if we seek any help:

1. Gerry Baily	Math and Data Proc. Math
2. Jim Clark Bill Devlin	Science
3. Leigh Barker Liane Dolezar	Communications
4. Jim Tegtyeyer	Curriculum Specialist
5. Ken Race	Economics
6. Larry Stegall	Social Studies

It appeared that Fox Valley was better equipped than Waukesha (offered different modes of instruction.)

Adult basic education is separate at Waukesha. They operate in a store front downtown. They have a heavy concentration in their reading program grades 1-8. They get a cross section of people into their program. Handicapped, slightly retarded, immigrants, and a variety of drop-out cases. They use three basic types of hardware: the autotutor, Audix, and tastistiscope. They like to recycle successful people back as tutors. Their lab runs in shifts from 9:00 a.m. to 9:00 p.m.

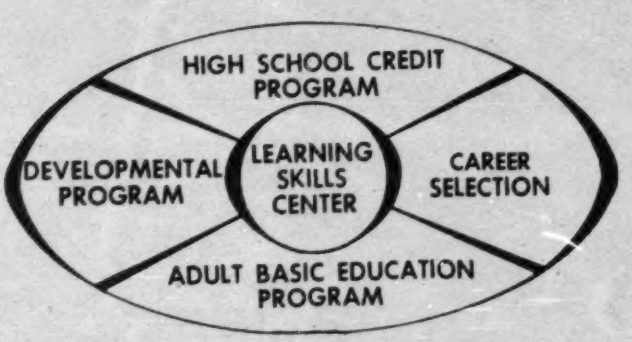
They are also moving to shifts in their regular programs. Econ, Psyc, etc. with each having one instructor working from 4:30 p.m. to 9:30 p.m.

It appears that we could utilize out present facilities for individualized instruction. This could be initiated in a three classroom complex in one subject area at a time.

We should and are surveying our present materials. They must be placed out in the open on shelves where students see and use them. We could easily develop our own coding system for these materials in each subject area.

We feel that this trip was very worthwhile and has equipped us with the knowledge necessary to implement changes in the developmental and regular programs.

NORTH CENTRAL TECHNICAL INSTITUTE
STRUCTURE AND FUNCTIONS



The developmental program is designed with built-in student flexibility to meet the needs of all students full or part-time who can benefit from one or more of the developmental experience offered.

The developmental program is housed in a newly remodeled Learning Skills Center. This will serve as a home base not only for the developmental subjects but also for the High School Credit and Adult Basic Education programs.

The Learning skills Center is also open to students enrolled in regular programs who just want to "brush up"on study skills or reading, for example.

Other students may come in to survey and explore a variety of career opportunities.

Student Services will evaluate each student entering NCTI through the use of entrance examinations, interviews and evaluations of over-all scholastic achievement.

The students who appear to have scholastic deficiencies or who appear to need special help to achieve his vocational goals is counseled into that part of the developmental program which will best meet his needs.

Some students will have low basic academic levels and not be able to use arithmetic, reading, writing, speaking, spelling and listening skills constructively. These students could be below or above the eighthgrade level of achievement.

Those below the eighth grade level of achievement will be assigned to the developmental program as Adult Basic Education Students. These students may elect to study for and take the high school equivalency examination. The only requirements are that the student must be 16 years of age to enter, and he must be 19 to write the high school equivalency examination. (The age limits are state law requirements.)

Students above the eighth grade level of achievement who have not completed their high school education can enroll in high school credit classes

and eventually receive a diploma from their home town high school. A student however, who has more than two years of high school work to take may also elect to study for and take the high school equivalency test.

Many of the lower ability Program students will be enrolled in the heart of the program which consists of the following subjects:

Study Skills

Purpose:

A great many students find themselves battling for survival in the world of post-high school education. Countless others achieve their express academic goals but fall short of their potential for success. Deficiencies in the basic learning skills - reading, writing, listening, remembering, note-taking, and test-taking - are responsible for a substantial number of academic failures. Yet these skills can be mastered.

The purpose of this module is to assist students in both acquiring the effective study habits and developing the positive attitudes that lead to fruitful learning experiences.

General Goals: Upon completion of this module, the student will

(1) Have increased confidence and a better attitude toward classroom learning.

(2) Be more effective at listening and note-taking in a lecture situation.

(3) Understand the importance of organizing and reviewing classroom notes.

(4) Have increased confidence in his ability to use the library.

(5) Have learned how to apply systematic procedures for more effective test-taking and be able to score higher on both objective and essay exams then previously.

Specific Objectives: Upon completion of this module, a student will

(1) Adopt an organized approach to listening.

(2) Adopt an organized approach to note-taking.

(3) Outline and organize his classroom notes.

(4) Use memory aids when they are needed.

(5) Recognize the verbal signals used in lectures.

(6) Locate and use correctly the following library resources.

(a) Card catalog

(b) Reader's Guide to Periodical Literature

(c) Open and closed stacks

(d) Dictionary of Modern English Usage

(e) Periodical collection

(f) Various encyclopedic references

(g) The librarian

(7) Distinguish between the Dewey Decimal and Library of Congress classification systems.

(8) Be able to schedule his time before beginning work.

(9) Be able to search for and recognize the important word clues in exam questions.

(10) Adopt a strategy of answering easier questions first.

(11) Be able to use guessing as a technique of answering objective questions when it is profitable.

(12) Review answers before considering exam finished.

Reading Improvement

Purpose:

We live in an age when the sheer quantity of reading material which confronts us everyday is overwhelming. It is claimed that the growth of

television and other media reduces the need to read, but the fact remains that success in most lines of endeavor is very closely related to the ability to read.

The purpose of this course is to assist individuals in learning how to improve their reading skills and habits - how to read more rapidly and with greater comprehension.

General Objective:

To lead any ordinary, inefficient reader step by careful step to the place where he learns to comprehend the printed word rapidly, with efficiency and flexibility. Flexibility in reading consists of the ability to vary the reading processes in accordance with one's purpose while achieving a desirable level of performance.

Specific Objectives: Upon completing the course, a student will

(a) Attack unfamiliar words not in his sight vocabulary.

(b) Develop an effective plan for continuous vocabulary improvement.

(c) Demonstrate his ability to grasp the meaning of a word by its context in the sentence.

(d) Provide, when requested by instructor, the meaning of twenty prefixes which aid in identifying word meaning.

(e) Demonstrate his grasp of reading techniques by

1. Surveying reading selection
2. Skimming
3. Scanning material
4. Studying reading material.

(f) Be able to compute reading rate.

(g) Be able to define and explain "lip reading," "sub-vocalization," "regression," "word-by-word reading."

(h) Demonstrate his understanding that all his reading must have a purpose.

(i) Be able to pick out the main idea in a paragraph.

(j) Be able to identify and organize supporting details in a paragraph.

(k) Be able to read graphs and illustrations which an author includes in his selections.

(l) Be able to draw inferences from reading selections.

(m) Be able to demonstrate critical reading habits and understand propaganda, advertising, and articles appealing to emotional reactions.

(n) Have developed the ability to analyze, synthesize, and organize ideas.

(o) Be proficient in techniques of reading newspapers and magazines.

(p) Have developed a realization that reading can be fun.

Introduction to Communications

Course description:

The basic purpose of this course is to help students develop a background of writing and oral skills which will enable them to successfully complete the course work in their major fields.

Upon completion of the course, a student will be able to demonstrate a proficiency in writing sentences that show a coherent sequence of thought, are free of ambiguity, and meet accepted standards of punctuation, spelling, and capitalization.

Introduction to Communications

He will be able to write paragraphs that show a logical organization of introductory, supporting, and concluding sentences.

A student will further be able to seek, process, and organize information for use in the development of a written and orally-presented report or thesis.

T & I Occupational Survey

This course will provide students with the opportunity to explore various occupations in the T & I area. Students who are not sure of what program to enter will be able to try various areas and thereby make a better choice. Students who have already decided on an occupational choice will have their interest and ability put to the test through the experiences afforded through this course. The course will provide for classroom study of occupations, shop and laboratory observation, shop and laboratory experience (when feasible), interviews with major instructors, and other activities which may be arranged.

Science

Emphasis will be placed on preparing the student for entry into the Technical Science or Applied Science courses required for his major. A basic knowledge of physical science and problem solving techniques will be the primary components of the course. Laboratory experiences will be provided.

All of the courses listed above with the exception of the T & I Occupational survey course will be taught in the learning skills center located in the old reading lab in room 177 where most of the teaching will be done on an individualized basis.

Principles of Mathematics

This course is designed primarily for the student who has a weak background in basic arithmetic and is planning to enter a diploma program. Topics include whole numbers, decimals, fractions, percents, ratio, proportion and the metric system. Emphasis is placed upon the application of basic arithmetic in business and industry.

Major objectives include proficiency in the use of fundamental operations, with emphasis on speed and accuracy, and the development of good problem solving techniques.

Algebra

This course is designed primarily for the student planning to enter an associate degree program. In general, such a student has only a basic arithmetic background or has not successfully completed a single high school algebra course. Topics include linear equations, factoring, exponents, radicals and quadratic equations.

A major objective of the course is to raise the proficiency level of the student to a level whereby he can enter his major field and successfully complete the related math courses.

Students are given pretests upon entering each course and post tests at the conclusion of each course to measure overall progress. In addition, reading machines, cassette recorders and other up-to-date audio visual equipment is used to provide the student with optional modes of instruction in an attempt to perscnalize each course.

Students will enroll in all or some of the subjects listed above, depending on their needs. A student with an IQ of 110 who had a "D" average in high school for example may need to spend much of his time working with study skills packages.

Other students will be in the lower quarter of their high school class or will have been out of high school for a long period of time. These students might enroll as part-time developmental students to brush up on reading and study skills while enrolled in a major. Special arrangements can be made for a student who decides to try a course in a major either for audit or credit.

High school graduates with excellent academic ratings might come into the learning skills center to scan the dictionary of occupational titles or participate in some occupational surveys.

As these examples show, the educational experience possibilities are numerous and flexible and will meet the needs not only of the "low-ability students" but also the average and above average student in a highly personalized manner.

Student Evaluation

A Mid-term evaluation is to be a written evaluation to the student in terms of his rate and extent of achievement.

A. A copy of this evaluation will be submitted to the developmental advisor by Friday of the ninth week.

B. Instructors shall take time to discuss this evaluation with the student in private, so that the student fully understands his progress and potential.

C. CQT test is to be readministered to the developmental student two weeks prior to the completion of the semester by the developmental instructor.

D. The results of the CQT, along with the instructor's final written evaluation shall be utilized in counseling with the student to determine his future educational direction.

As a result of the evaluation and interpretation of the test scores, and the instructor's observation during the semester, the instructor shall prepare a written final evaluation indicating the student's over-all progress and achievement in the particular class.

A. This statement is to be in the developmental advisor's possession no later than the end of the 16th week of the semester.

B. In order that this statement can be prepared accurately, it is recommended that the instructor keep an accurate record of the student's class behavior; such as absence, tardiness, promptness of assignments, other study habits, etc.

C. An anecdotal record shall be maintained for each student.

D. The instructor will also indicate, in his written evaluation, whether or not he feels the student is prepared to enter into a specific major course of study. The final decision will be reached after a case conference on each student is held with Student Services and the developmental instructors. A date will be set each semester to accomplish this task.

NORTH CENTRAL TECHNCIAL INSTITUTE

VOCATIONAL-TECHNICAL DEVELOPMENTAL

INDIVIDUALIZED COURSES

Many of the developmental program courses have now been individualized. Individualized courses have the following grading guidelines:

1. A student who does not complete an individualized course at the end of the semester will have up to six weeks to complete the requirements and will receive a grade of IP - In Progress (see new grading policy.) The student who receives an IP has the responsibility of initiating arrangements to complete the work by pre-enrolling in the same course the following semester.
2. A student who does not complete the course after the nine week period will receive the final grade of NC.
3. The student shall be granted credit for each developmental course (see new catalog.) The credit granted, however, shall not reduce the number of required credits that the student will eventually take in his major. The credits shall be figured in the grade point average for that grading period but not in the accumulative grade point average.

Course Auditing

A developmental student wishing to audit a course in a major will meet the attendance requirements established by his developmental instructor which will be commensurate with the length of the audit.

Auditing students will have the privilege of attending classes but will not be required to take examinations and will receive no grade credit.

A course that has been audited does not appear on the student's official transcript unless he participated for the entire semester.

In this case, the audit does appear on the student's offical transcript but does not imply any degree of achievement.

A student may change from credit to audit anytime by following the standard procedure for schedule changes.

After two weeks, a student may not change from audit to credit except with permission from his advisor and instructor.

When a student has changed to audit, he may not at a later date change back to credit status.

Withdrawal

Students finding it necessary to withdraw from the developmental program should contact Student Services and their developmental instructor immediately. Every effort will be made to counsel the student and mutally arrive at options which may be considered by the student at a future date.

These options might include:

1. Seeking immediate employment.
2. Enrollment at another Technical institute or four year university.
3. Military services.

DEVELOPMENTAL RECORD FORM

Appendix F

STUDENT SERVICES DATA

Name _____
(First) (Initial) (Last)

Address _____ Phone _____
(Number & Street) (Community)

Date Enrolled _____, 19_____

Full-Time _____

Part-Time _____

High School Credit _____

Adult Basic Education _____

Date Officially Withdrawn _____

Reason for Withdrawal _____

	Test Scores	Date Tested
Mechanical Score	____	_____
Verbal Score	____	_____
Numerical Score	____	_____
Reading Score	____	_____

Courses Enrolled In

Reading Improvement	____
Introduction to Communications	____
Study Skills	____
Principles of Mathematics	____
Algebra	____
Introduction to Physical Science	____
T & I Occupational Survey	____

.....

Developmental Diagnostic Tests

	Pretest	Post Test
Reading	____	____
Communication Skills	____	____
Basic Math	____	____
Algebra	____	____
Physical Science	____	____
Study Skills	____	____

7-9-72-D

Comments:

1. Student's desire for career goal:

Student's Career Goal	Date	Instructor's Initial

2. Student's overall progress:

3. Faculty prognosis:

A Follow-up Study on Students in the Developmental Program (formerly the Prep Program) From 1970-73

Submitted to:

Mr. Russell Paulsen

by

Thomas Kerkes

NORTH CENTRAL TECHNICAL INSTITUTE

August 1973

Follow-up Study
1970-1973

INTRODUCTION AND PURPOSE

This report was prepared with the assistance of Mr. Russell Paulsen, Administrator of Research and Development, to determine the number of developmental students (formerly called preparatory, from 1970 to 1973 who:

1. Entered the developmental program.
2. Completed the developmental program.
3. Dropped out of the developmental program.
4. Entered a full-time program.
5. Completed a full-time program.
6. Dropped out of a full-time program.

This study was also designed to determine the present status of students who dropped out of the developmental program or entered a major and then dropped out; and to obtain comments from drop-outs on the strengths and weaknesses of the developmental program.

PROCEDURE AND POPULATION

This study initially involved 169 students who entered the developmental program from January of 1970 through January of 1973. The names and basic data for this study were taken from student records during the summer of 1973.

A number of students who left NCTI were not counted as drop-outs, they were:

1. Two students who received certificates of training.
2. Four "job-outs" (found employment).
3. Three NCTI students who switched to the Antigo branch campus.

A follow-up questionnaire (see appendix C, figure I), along with an explanatory letter (see appendix figure II), were mailed to the 89 drop-out students.

Twenty-one of these students were drop-outs from the preparatory program and 68 had enrolled in a major and dropped out.

ANALYSIS OF DATA

Seventeen of the original 89 questionnaires were returned for a 15 % return. Nine of these seventeen are presently employed. Their average monthly salary before deductions is $559.22 (see table I).

TABLE I

Present Monthly Salary Before Deductions - Occupations, and Locations of Developmental Program Drop-Outs.

Locations	Salaries	Occupations
Wausau	$1100.00	Truck Driver
Park Falls	$900.00	Paper Mill (Backtender)
Spencer	$540.00	Cheese Factory (Wrapper)
Antigo	$488.00	Supermarket (Produce Department)
Mosinee	$450.00	Spare Hand Worker
Wausau	$440.00	Cabinet Assembler
Wausau	$410.00	Roofer (Mop, Lay Paper)
Marshfield	$380.00	Surgical Aid
Merrill	$325.00	Dental Assistant-(Receptionist)

$9\overline{)5033.00} = \$559.22$

Average Monthly Salary

As table I indicates the highest paid individual earns $1100/month. This person is employed as a truck driver. The second highest is a paper mill worker earning $900/month. The remaining salaries tend to be clustered closer together and represent a variety of occupations.

Six of the above respondents stated that the most effective factor in obtaining a job was friends and relatives. Two returned to a previous employer and one found a job on her own. It was interesting to note that none listed someone working at this school as being most effective in obtaining their job.

The locations listed in table I, show that all nine respondents showed a preference for central and northern Wisconsin.

An analysis of the remaining eight students reveals the following: one is still seeking employment, two female students are now married homemakers, one is attending Northeast Wisconsin Technical Institute, one is attending the University of Wisconsin at Stevens Point, two have re-enrolled at NCTI for the fall term and one is disabled and unable to work.

ANALYSIS OF STUDENTS ENTERING A MAJOR

148 out of the original 169 students completed the developmental program. Nine of these students terminated their education at this point and 139 entered a major. Twenty-two of these entering a major have completed the program... as indicated in table II.

TABLE II

Number of Students Completing Specific Majors.

Major	Number of Students
Welding	1
Marketing	3
Nursing	4
Residential Design	1
Merchandising	3
Home Economics Assistant	2
Automotive	3
Electronic Servicing	1
Clerk Typist	

Forty-two of the original population of developmental students in this study are still working to complete their majors sometime during the 1973-74 school year.

North Central Vocational, Technical and Adult Education District

North Central Technical Institute

Lawrence B. Hoyt
Director

1000 Schofield Avenue

Wausau, Wisconsin 54401
Telephone 715 - 675-3331

July 11, 1973

Dear Former Student:

North Central Technical Institute is re-evaluating the preparatory program and would appreciate your cooperation in completing the enclosed questionnaire.

Please feel free to list the strengths and weaknesses of the preparatory program on the back of the enclosed card.

Thank you for your cooperation.

Sincerely,

Russell Paulsen

Russell Paulsen, Administrator
Research and Development

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